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ACADEMY OF INNOVATIVE EDUCATION

W01

INTRODUCTION TO JAVA

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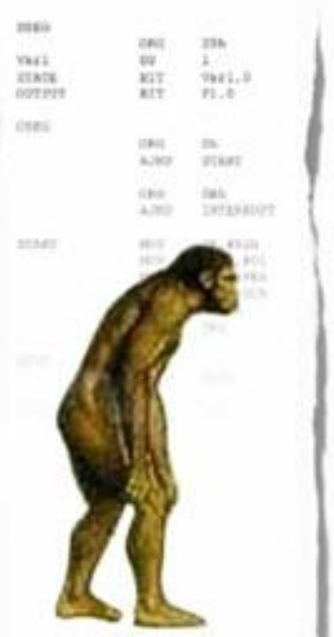
The Evolution Of Computer Programming Languages

Hex



Assembler

C

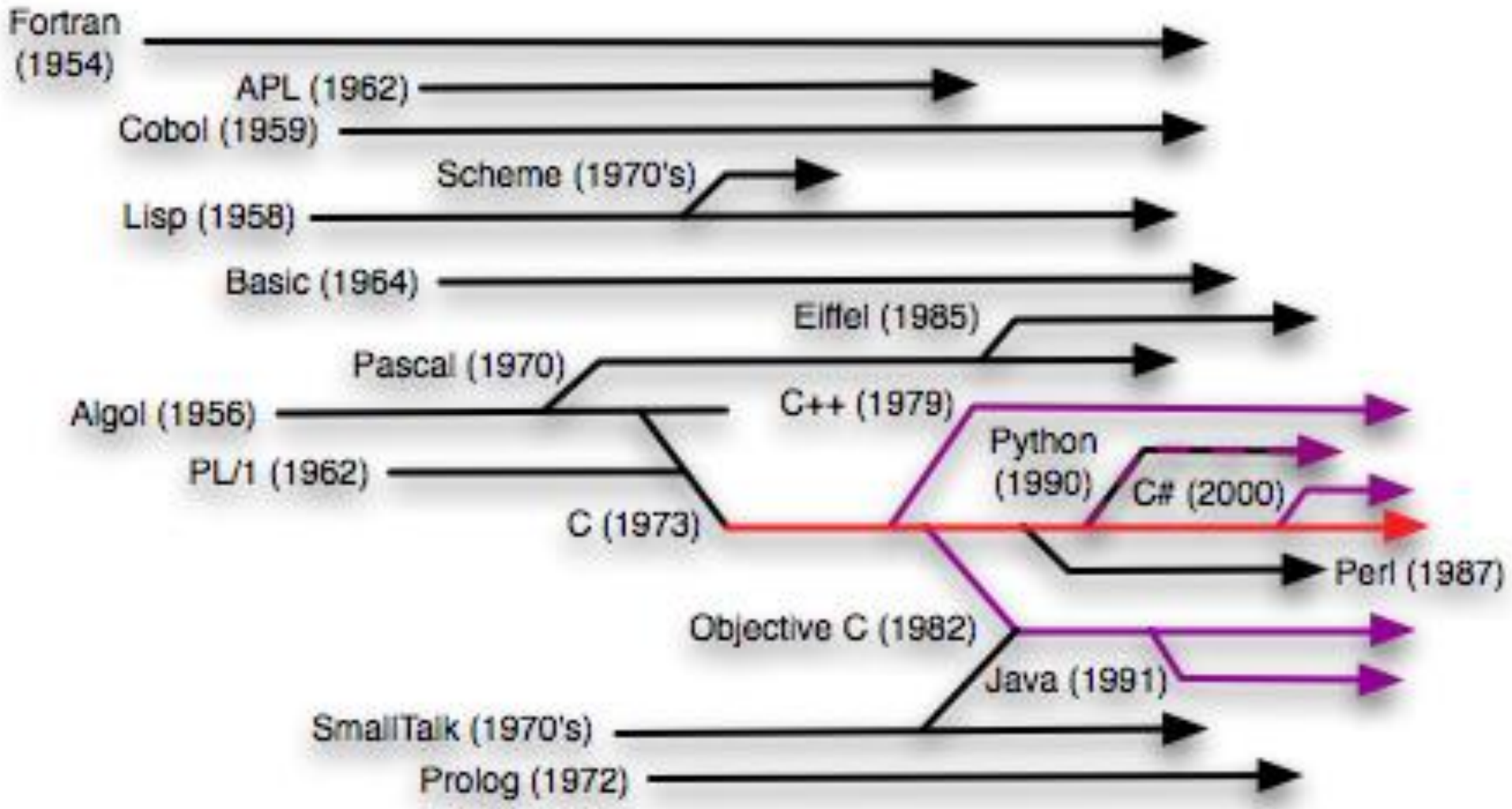
Fortran

C++

Java

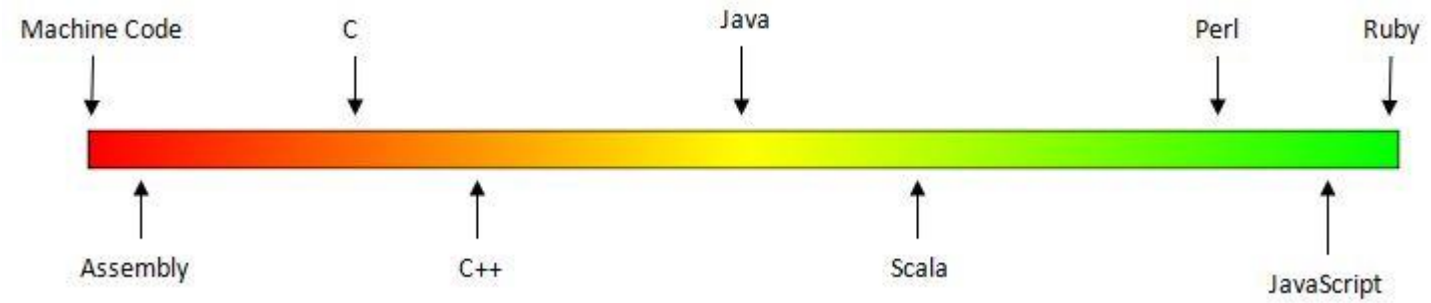
Ruby

NOW This


Fortran
(1954)
APL (1962)
Cobol (1959)
Scheme (1970's)
Lisp (1958)
Basic (1964)
Eiffel (1985)
Pascal (1970)
Algol (1956)
C++ (1979)
Python
(1990)
PL/1 (1962)
C# (2000)
C (1973)
Perl (1987)
Objective C (1982)
Java (1991)
SmallTalk (1970's)
Prolog (1972)

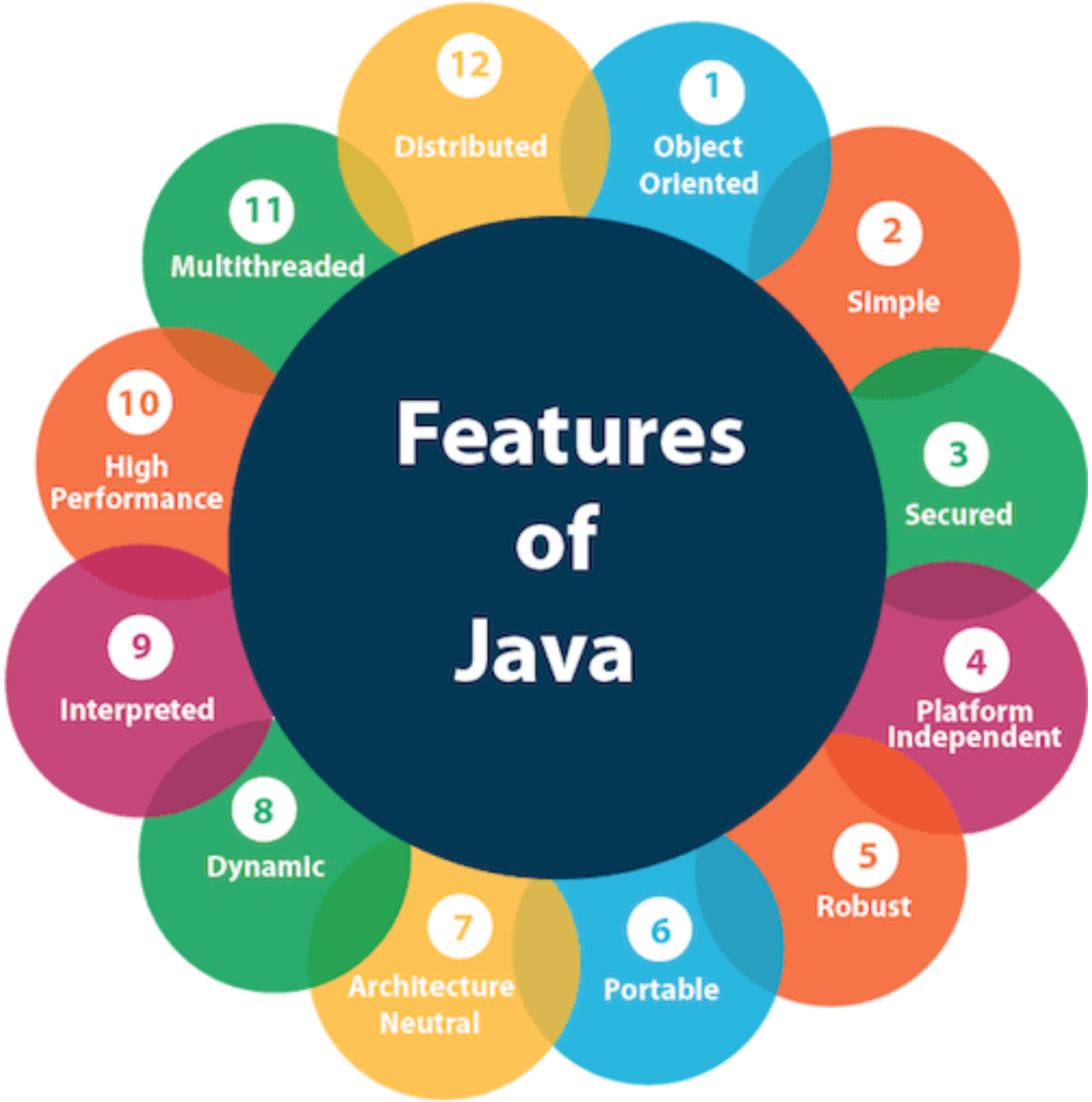
INTRODUCTION (1) *"Write Once, Run Anywhere"*

- Java is a high-level programming language.
- Originally developed by Sun Microsystems and released in 1995.
- Java runs on a variety of platforms, such as Windows, Mac OS, and the various versions of UNIX
- JAVA is a Object-Oriented Programming Language.



Note: A programming language is said to use static typing when type checking is performed during compile-time as opposed to run-time.

Why Java?


Features of Java
1 Object Oriented
2 Simple
3 Secured
4 Platform Independent
5 Robust
6 Portable
7 Architecture Neutral
8 Dynamic
9 Interpreted
10 High Performance
11 Multithreaded
12 Distributed

INTRODUCTION (2)

- **Object Oriented** − In Java, everything is an Object. Java can be easily extended since it is based on the Object model.
- **Platform Independent** − Unlike many other programming languages including C and C++, when Java is compiled, it is not compiled into platform specific machine, rather into platform independent byte code. This byte code is distributed over the web and interpreted by the Virtual Machine (JVM) on whichever platform it is being run on.
- **Simple** − Java is designed to be easy to learn. If you understand the basic concept of OOP Java, it would be easy to master.

INTRODUCTION (3)

- **Secure** – With Java's secure feature it enables to develop virus-free, tamper-free systems. Authentication techniques are based on public-key encryption.
- **Architecture-neutral** – Java compiler generates an architecture-neutral object file format, which makes the compiled code executable on many processors, with the presence of Java runtime system.
- **Portable** – Being architecture-neutral and having no implementation dependent aspects of the specification makes Java portable. Compiler in Java is written in ANSI C with a clean portability boundary, which is a POSIX subset.

INTRODUCTION(4)

- **Robust** – Java makes an effort to eliminate error prone situations by emphasizing mainly on compile time error checking and runtime checking.
- **Multithreaded** – With Java's multithreaded feature it is possible to write programs that can perform many tasks simultaneously. This design feature allows the developers to construct interactive applications that can run smoothly.
- **Interpreted** – Java byte code is translated on the fly to native machine instructions and is not stored anywhere. The development process is more rapid and analytical since the linking is an incremental and light-weight process.

INTRODUCTION(5)

- **High Performance** − With the use of Just-In-Time compilers, Java enables high performance.
- **Distributed** − Java is designed for the distributed environment of the internet.
- **Dynamic** − Java is considered to be more dynamic than C or C++ since it is designed to adapt to an evolving environment. Java programs can carry extensive amount of run-time information that can be used to verify and resolve accesses to objects on run-time.

Why JAVA and what is the usage? (1)

- Create **Web Applications**
- Build **Applications and Platforms** for a number of devices, including computers, laptops, gaming consoles, Blu-ray players, car navigation systems, medical monitoring devices, parking meters, lottery terminals and smartphones.
- It is also a key language for **Networking**, particularly for data centers that store and transfer Web-based data.
- **Google Recommends for Android App Development**
- **Loads of Frameworks, Libraries, IDEs and Development Tools**

Why JAVA and what is the usage? (2)

- **Simplify Development of Real-Time Software**
- **Supports Internet of Things**